

Exhibit R-2, RDT&E Budget Item Justification						February 2004	
Appropriation/Budget Activity RDT&E.DW/BA3		R-1 Item Nomenclature: SO/LIC Advanced Development PE 0603121D8Z					
Cost (\$ in millions)	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Total PE Cost	18.495	33.605	32.682	33.752	34.276	34.142	35.776
Special Operations/Low-Intensity Conflict Analytical Support/P205	0.835						
Explosive Ordnance Disposal/Low-Intensity Conflict (EOD/LIC)/P206	6.670	10.940	9.411	9.388	9.518	9.554	9.745
Special Reconnaissance Capabilities (SRC)/P207	10.990	20.695	20.275	20.370	20.765	20.590	21.025
Information Dissemination Concepts/P208		1.970	2.996	3.994	3.993	3.998	5.006

A. Mission Description and Budget Item Justification:

BRIEF DESCRIPTION OF ELEMENT

P205, Special Operations/Low-Intensity Conflict (SO/LIC) Analytical Support. The SO/LIC Analytical Support project provides specialized research and analytical support for the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD (SO/LIC)). Projects address a broad spectrum of technical, acquisition, and policy issues relating to special operations, combating terrorism, peacekeeping, psychological operations, counterinsurgency, unconventional warfare, and contingency operations. The project supports and is integrated into overall DoD efforts to develop options for dealing effectively with a wide range of military responsibilities in military operations other than war. This project provides a vehicle to initiate analysis required to support acquisition documentation and conceptual policy issues regarding roles and missions of Special Operations Forces in the changing world environment. Analysis may also be used to improve OASD(SO/LIC)'s congressionally mandated oversight function of special operations and low-intensity conflict. In FY 2004 this analytic support program will become a component of P206, Explosive Ordnance Disposal/Low Intensity Conflict, providing efficiency of management and execution.

P206, Explosive Ordnance Disposal/Low-Intensity Conflict (EOD/LIC). The EOD/LIC program provides advanced technology and equipment solutions for military EOD operators and SOF to meet the challenges of homeland defense, force protection and the war on terrorism. EOD/LIC efforts focus primarily on the detection, access, identification, and neutralization of all types of conventional explosive ordnance and improvised explosive devices including weapons of mass destruction. Requirements submitted by the Joint Service EOD and Service Special Operations communities are prioritized and approved by OASD(SO/LIC).

P207, The Special Reconnaissance Capabilities (SRC) R&D Program addresses reconnaissance and surveillance inadequacies in the Department of Defense's ability to collect timely, actionable intelligence on difficult-to-access, high-value targets and on tagging, tracking and locating (TTL) vehicles, aircraft, vessels, containers, and individuals. Supporting technologies include the application of unattended ground sensors, tagging, tracking and locating (TTL), communications, power management, command, control and networking of sensors, mobility and delivery of sensors and situational awareness interfaces. The program also provides the new capability, as well as the technical expertise necessary to train operational users to enhance DoD special reconnaissance mission applications.

P208, The Information Dissemination Concepts project will address technology capabilities necessary to enable sustained information dissemination in denied areas. This project will leverage ongoing research efforts of USSOCOM, the Services and Defense and other agencies to develop, modify and demonstrate dissemination mechanisms, platforms and payloads. These development efforts will include research into high altitude, lighter-than-air vehicles, modifications to chipsets for receivers capable of receiving space based radio broadcasts, and transmit/receive payloads. These payloads have the potential to be deployed from numerous platforms to include unmanned lighter-than-air vehicles and unmanned aircraft.

B. Program Change Summary: (Show total funding, schedule, and technical changes for the program element that have occurred since the previous President's Budget Submission)

	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>
Previous President's Budget	18.608	31.300	32.723
Current President's Budget	18.495	33.605	32.682
Total Adjustments			
Congressional program reductions			
Congressional rescissions			
Congressional increases		2.800	
Reprogrammings			
SBIR/STTR Transfer			
Other Program Adjustments	.113	.495	.041

Exhibit R-2a, RDT&E Project Justification				February 2004			
Appropriation/Budget Activity			Project Name and Number				
RDT&E.DW/BA3			SO/LIC Advanced Development 0603121D8Z				
Cost (\$ in millions)	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Special Operations/Low-Intensity Conflict Analytical Support/P205	0.835						

A. Mission Description and Budget Item Justification:

BRIEF DESCRIPTION OF ELEMENT

P205, Special Operations/ Low-Intensity Conflict (SO/LIC) Analytical Support. The SO/LIC Analytical Support project provides specialized research and analytical support for the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (ASD (SO/ LIC). Projects address a broad spectrum of technical, acquisition, and policy issues relating to special operations, counter-and anti- terrorism, peacekeeping, psychological operations, counterinsurgency, unconventional warfare, and contingency operations. The project supports and is integrated into overall DoD efforts to develop options for dealing effectively with a wide range of military responsibilities in military operations other than war. The project provides a vehicle to initiate analysis required to support acquisition documentation and conceptual policy issues regarding roles and missions of SOF in the changing world environment. Analysis may also be used to improve OASD(SO/LIC)'s congressionally mandated oversight function of special operations and low-intensity conflict. In FY 2004 this analytic support program became a component of P206, Explosive Ordnance Disposal/Low Intensity Conflict, providing efficiency of management and execution.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Accomplishment/Effort/Subtotal Cost	.0835		

FY 2003 Accomplishments:

Completed effort: Counter Exploitation Analysis Capability for Technology Proliferation. Successfully demonstrated enhanced integrated, cross-functional, interagency analyses and support capability in cooperation with USSOCOM, Defense Technology Security Administration, and the intelligence community.

Completed effort: Psychological Operations Agent-Based Analyses Environment Assessment. Successfully demonstrated this agent based approach with US PSYOP forces, and assessed its capability to improve: analytical thoroughness; incorporation of operational feedback and institutional expertise; and analyst training. Work is being considered for transition into the PSYOP ACTD Global Reach.

Completed effort: Advanced Distributed Learning (ADL) Front End Analysis. Examined current ADL training programs within the SOF community to develop a baseline for future application of ADL initiatives.

Completed effort: Language Translation, Data Extraction Assessment. Successfully demonstrated the integration of two-way handheld translation and data extraction capability into a commercial Palm-based computer for the SOF community.

Completed effort: Munitions Assessment Study that provided munitions program experts a baseline to make informed decisions for providing new ordnance tools and equipment to EOD/SOF operators.

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Cost (\$ in millions)		FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Explosive Ordnance Disposal/Low-Intensity Conflict/P206		6.670	10.940	9.411	9.388	9.518	9.554	9.745

A. Mission Description and Budget Item Justification:

BRIEF DESCRIPTION OF ELEMENT

P206, Explosive Ordnance Disposal/Low-Intensity Conflict (EOD/LIC). The EOD/LIC program provides advanced technology and equipment solutions for military EOD operators and SOF to meet the challenges of homeland defense, force protection and the war on terrorism. EOD/LIC efforts focus primarily on the detection, access, identification, and neutralization of all types of conventional explosive ordnance and improvised explosive devices including weapons of mass destruction. Requirements submitted by the Joint Service EOD and Service Special Operations communities are prioritized and approved by OASD(SO/LIC).

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Accomplishment/Effort/Subtotal Cost	6.670	10.940	9.411

FY 2003 Accomplishments:

Completed development of Limpet Mine Detection System. Completed development of the Improved Underwater Demolition Charge. Completed development and evaluation of the Limpet Mine Neutralization Tool. Completed development of the EOD Laser Ordnance Neutralization System (H-LONS). Completed development of the Chemical Leak Seal. Completed development of the Obscurant System for the Special Operations Craft – Riverine (SOC-R). Completed development of the SOF Incendiary Device. Completed development of the EOD Large Package X-ray Apparatus (LAPAXA). Completed development of the EOD Information System (EODIS)/Advanced EOD Procedures System (AEODPS). Completed development of the Miniature Reconnaissance Vehicle (MRV) Sub-System Integration. Completed modification of the Automated EOD Publication System (AEODPS) Identification Guide software to operate with PDA’s. Completed development of sub-systems for the EOD Mission Support Center. Continued development of an Integrated Diver Display Mask. Continued development of the Remote EOD Mini-Reconnaissance Vehicle. Continued development and evaluation of the EOD Underwater Search Remotely Operated Vehicle (ROV). Continued development of the SOF Tactical Decision Aids (TDA). Continued development of the Single-Sided X-Ray system. Continued development of the X-Ray Interpreter Software. Continued development of the Miniature Diver Display System (MDDS) with the DIDSON sonar. Completed development of the Unmanned Reconnaissance and Observation Craft (UROC). Continued development of the Remote Automated Munitions Clearance System. Continued development of the EOD Dispersion Suppressive System. Continued development of the EOD Improved Incendiary Tool. Continued development of the Joint EOD Digital Reporting and Tracking System (JEOD-DIGS). Continued the integration of the Tele-present Remote Aiming Platform

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(TRAP) and the USAF All-purpose Remote Transport System (ARTS). Continued development of the Remote Activation Munitions System (RAMS) Shock Tube Initiator Module. Started development of the Hydraulic Manipulator for Robots in cooperation with international partner. Started development of Ballistic Protection for the Special Operations Craft – Riverine (SOC-R). Started development of a Real Time Radiography System for Large Improvised Explosive Devices. Started development of a Krait/TORC Recoilless Disrupter with international partner. Started development of a Hydraulic Manipulator with international partner.

FY2004 Plans:

Complete development of the Integrated Diver Display Mask (IDDM). Complete development of Ballistic Protection for the Special Operations Craft – Riverine (SOC-R). Complete development of the EOD Dispersion Suppressive System. Complete development of a Real Time Radiography system for Large Improvised Explosive Devices. Complete development of a Tele-present Remote Aiming Platform for the ARTS robot. Continue development of the Remote EOD Mini-Reconnaissance Vehicle. Continue development and evaluation of the EOD Underwater Search Remotely Operated Vehicle (ROV). Continue development of the SOF Tactical Decision Aids. Continue development of the Single-Sided X-Ray system. Continue development of the X-Ray Interpreter Software. Continue development of the Miniature Diver Display System (MDDS). Continue development of an Unmanned Reconnaissance and Observation Craft (UROC). Continue development of the Remote Automated Munitions Clearance System. Continue development of the EOD Improved Incendiary Tool. Continue development of the Joint EOD Digital Reporting and Tracking System (JEOD-DIGS). Continue development of the Remote Activation Munitions System (RAMS) Shock Tube Initiator Module. Continue development of the Krait/TORC Recoilless Disrupter. Continue development of a Hydraulic Manipulator. Start development of Improvised Explosive Device Detection System. Start test and evaluation of the MK 6 Benign Case Entry System. Start development of the Active Thermal Protection System. Start development of Personal Data Assistant Software. Start development of the Tactical Urban Breaching Toolkit. Start development of an Advanced Robotic Vehicle. Provide specialized research and analytical support to OASD SO/LIC.

FY2005 Plans:

Complete development of a Real Time Radiography System for Large Improvised Explosive Devices. Complete development of the Krait/TORC Recoilless Dearermer. Complete development of a Hydraulic Manipulator. Continue development of the Remote EOD Mini-Reconnaissance Vehicle. Continue development and evaluation of the EOD Underwater Search Remotely Operated Vehicle (ROV). Continue development of the SOF Tactical Decision Aids. Continue development of the Single-Sided X-Ray system. Continue development of the X-Ray Interpreter Software. Continue development of the Miniature Diver Display System (MDDS). Continue development of the Unmanned Reconnaissance and Observation Vehicle (UROC). Continue development of the Remote Automated Munitions Clearance System. Continue development of the EOD Improved Incendiary Tool. Continue development of the EOD Dispersion Suppressive System. Continue development of the Joint EOD Digital Reporting and Tracking System (JEOD-DIGS). Continue development of the Remote Activation Munitions System (RAMS) Shock Tube Initiator Module. Continue development of PDA software. Continue development of the Active Thermal Protection System. Continue evaluation of the MK 6 Benign Case Entry System. Continue development of the Tactical Urban Breaching Toolkit. Continue development of an Advanced Robotic Vehicle. Continue development of an Improvised Explosive Device (IED) Detection System. Continue to provide specialized research and analytical support to OASD SO/LIC.

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Exhibit R-2a, RDT&E Project Justification				February 2004			
Appropriation/Budget Activity RDT&E.DW/BA3		Project Name and Number SO/LIC Advanced Development 0603121D8Z					
Cost (\$ in millions)	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Special Reconnaissance Capabilities (SRC) /P207	10.990	20.695	20.275	20.370	20.765	20.590	21.025

A. Mission Description and Budget Item Justification:

BRIEF DESCRIPTION OF ELEMENT

P207, The SRC program exploits, leverages, and integrates DOD’s service and agency efforts to improve reconnaissance and surveillance (R&S) tools (unattended sensors, tagging devices, data infiltration/exfiltration, remote delivery, and mobility/delivery of sensors), while providing operational focus for DoD and other agency technology and development programs. The SRC Program identifies, integrates, and operationalizes the technical tools for the collection of actionable information against a variety of targets and mission requirements and maintains DoD’s on-line catalog of tools in order to minimize special reconnaissance and surveillance crisis response time.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Accomplishment/Effort/Subtotal Cost	10.990	20.695	20.275

FY 2003 Accomplishments:

- Developed standoff identification capability through the use of inherent signatures.
 - Enhanced and evaluated the capabilities of the current RF-backscatter tagging systems. The systems now provide for the detection and identification of vehicles or objects with subsequent data exfiltration.
 - Developed, demonstrated, evaluated, miniaturized, and establish cache of small, readily concealed tracking devices and beacons to support rapid integration for response to anticipated operational support requirements.
 - Improved optical tags and began operationalizing these capabilities.
 - Evaluated existing platform sensing capabilities for tag operations. Integrated tagging capabilities into National Assets for demonstrations.
 - Pursued remote tagging emplacement and removal capabilities in concert with user CONOPS. Various Tagging capabilities are being developed for evaluation and demonstration.
 - Developed and demonstrated the capability to automatically detect a target moving past the camera, automatically capture an image of that target, and exfiltrate the image to a remote Mission Support Site.
 - Improved Night Remote Optics. Developed and demonstrated the capability to detect a moving target in total darkness, capture an image of that target, and automatically compress the image data to smaller packets for rapid exfiltration.
 - Improved power management/ endurance and reliability of remote sensor controller.
 - Continued integration of maturing COTS/GOTS developmental sensors with the Remote Sensor and Camera Controller (RSC2) in response to DOD and OGA requirements. Transitioned RSC2 baseline capability to two government agencies.
- Continued to enhance functionality and expanded access of on-line information to supporting commands, DOD activities and OGAs.
- Assessed more than 24 reconnaissance capabilities and conducted twelve technology evaluations to assess operational capabilities.

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- Participated in user required operational prototype training where SOF successfully employed sensors and the RSC2 to detect time critical targets and rapidly relay images and sensor data to command and control centers.
- Improved Remote Sensor Controller mission life through the development of low power transceiver.
- Leveraged advanced sensing, tracking, communications and power technologies for insertion into SRC architecture.
- Initiated project to integrate RSC2 and sensors on robotic platform in support of Army SOF requirements.
- Continued to support cooperative projects with the Defense Intelligence Agency to accelerate the transition of advanced R&S technology to operational community.
- Modified and integrated existing sensors into a suite of single sensor modules with the capability to perform multiple sensing functions.
- Program Office provided training and capabilities in support of Operation Enduring Freedom and the Global War on terrorism specifically for the following prototypes: Long Range Remote Observation Post Systems; Sly Viper suites comprised of remote sensor camera controller and associated optical and unattended ground sensors; Cardinal remote sensor controllers; Sly Stone remote sensor controller with suite of sensors; Sly Boulder remote sensor controller with suite of special optical sensors; Sly Pirate remote sensor controller with day and night cameras; and various tagging devices.

FY 2004 Plans:

- Continue to refine the family of tags both for end-to-end operations, mission specific, and emplacement for installation and removal capabilities in concert with user CONOPS.
- Enhance and evaluate military utility of next generation optical tags (UV, and IR polarization), and exploit these devices by using National and Theater Sensor Platforms.
- Continue to develop TTL standoff capabilities through the use of inherent signatures and total systems architecture. Such devices could be applied to various missions, combat identification, dismounted tracking, vehicle tagging, and small sensor data exfiltration for worldwide applications.
- Provide for the improvement & integration of Day and Night Optics (I2/IR) into the Remote Sensor Camera Controllers (RSC2). Improvements include range & resolution, and integrate smart processing.
- Continue integration of various robust communication links with the RSC2.
- Provide for the continued integration of reliable unattended ground sensors.
- Continue to perform field evaluations of selected SR technologies and document results in on-line R&S knowledgebase.
- Continue to catalog and warehouse operationalized prototypes and residuals for potential operational use.
- Develop and demonstrate a brass board prototype radar tag system. Evaluate options for a command downlink with minimal impact on tag power consumption and mission life and provide a plan to reduce size of the tag by 25%.
- Develop and perform end-to-end assessment of next generation small beacon devices capable of communicating low-duty factor, short-burst, low-rate data messages over very long ranges using a very small/low power device.
- Integrate GPS for position and time accuracy, pager for remote wake up, reduce form factor and improve power management into the prototype RSC2.
- Integrate airdrop and maritime form factor changes into the RSC2 for evaluation.

FY 2005 Plans:

- Integrate new, miniature sensors into prototype remote sensor controller architectures.
- Continue to evaluate and operationalize sensor and tagging, tracking, and locating emerging and maturing technologies for their potential to enhance or enable the technical performance of R&S missions.
- Continue to engage the research and development community for technical solutions and candidate technologies to improve DOD' SR mission capabilities.
- Continue to insert operationally capable prototypes into operator training exercises to expose troops to help vet technologies and new develop tactics, techniques and procedures for employment.
- Continue to research, evaluate and integrate enhanced tagging and sensing capabilities to enable remote and standoff emplacement.

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- Continue to integrate improved SR data infiltration and exfiltration capabilities through the development and integration of advanced technology and new communications links.
- Continue to perform field evaluations of selected SR technologies and document results in on-line R&S knowledgebase.
- Continue to catalog and warehouse operationalized prototypes and residuals for potential operational use.
- Integration of Micro sensors and TTL devices
- Develop mini sensor controller for hand emplacement, and air and maritime employment.
- Integrate Dynamically Reconfigurable Vision camera technology into operational architecture.

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Information Dissemination Concepts/P208		1.970	2.996	3.994	3.993	3.998	5.006

A. Mission Description and Budget Item Justification:

The Information Dissemination Concepts project will address technology capabilities necessary to enable sustained information dissemination in denied areas. This project will leverage ongoing research efforts of USSOCOM, the Services and Defense and other agencies to develop, modify and demonstrate dissemination mechanisms, platforms and payloads. These development efforts will include research into high altitude, lighter-than-air vehicles, modifications to chipsets for receivers capable of receiving space based radio broadcasts, and transmit/receive payloads. These payloads have the potential to be deployed from numerous platforms to include unmanned lighter-than-air vehicles and unmanned aircraft.

B. Accomplishments/Planned Program

	FY 2003	FY 2004	FY 2005
Accomplishment/Effort/Subtotal Cost		1.970	2.996

FY 2004 Plans:

New Start: Work with USSOCOM to identify and prioritize community requirements for PSYOP planning and analysis, remote sensing, broadcasting and range instrumentation. Write future work plan.

New start: Multimedia Alert Processing System (MAPS) is a DOD effort sponsored by the Technical Support Working Group. MAPS goal is to automate the encoding, processing, and storage of multi-lingual broadcast video in such a manner to allow content-based retrieval of processed video from a large media archive in near real time. MAPS ultimately will decrease time to disseminate information gathered from foreign language broadcast video.

Accelerate: Ongoing development efforts for long-duration, lighter-than-air vehicles to support information dissemination in denied territories. Specifically, PSYOP Global Reach ACTD. A USSOCOM initiative, this program plans to exploit technologies capable of disseminating information across a variety of media, and extend ranges into denied areas. Program will also improve PSYOP planning and analytical capability through technologies that are integrated into SOF planning systems.

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FY 2005 Plans:

Continued effort: Continue with USSOCOM projects as identified in FY 2004.

Continued effort: Development and demonstration of Multimedial Alert Processing System.

Continued effort: Potential for continued support to PSYOP Global Reach ACTD.